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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,822	09/16/2003	Javit A. Drake	08935-297001 / M-5031	3431
26161	7590	03/26/2007	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			HODGE, ROBERT W	
			ART UNIT	PAPER NUMBER
			1745	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/26/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/664,822	DRAKE ET AL.
	Examiner Robert Hodge	Art Unit 1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 05 March 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-39 is/are pending in the application.  
 4a) Of the above claim(s) 34-39 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-33 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 11 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/30/06 &amp; 10/6/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statements filed 10/6/05 and 5/30/06 have been considered by the Examiner and have been placed in the application file.

### ***Election/Restrictions***

Applicant's election without traverse of claims 1-33 in the reply filed on 3/5/07 is acknowledged.

Applicant's election with traverse of the Species 2, figure 2b, polyurethane, polyethylene and cross-linked rubber in the reply filed on 3/5/07 is acknowledged. The arguments are persuasive and the species election requirement has been withdrawn.

### ***Claim Objections***

Claims 22, 23and 30 are objected to because of the following informalities: It appears in claim 22 that "isa" should be "is a", in claim 23 "isis" should be "is" and in claim 30 "24wherein" should be "24 wherein". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 depends on claim 18, which has already limited the polymer membrane to one material, therefore because claim 18 has already been narrowed, claim 19 cannot broaden the scope back out. It appears applicants meant to refer to claim 11 not 18.

Claim 24 recites the limitation "the fuel cartridge" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 5-10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pre-Grant Publication No. 2001/0049045 hereinafter Hockaday.

Hockaday teaches a fuel cartridge comprising a housing 1 with a fuel egress 11 supported by the housing and a multilayer composite vaporization membrane 8 and 9, having a cylindrical shape (figures 1 and 3), disposed about a substantial portion of an interior of the housing, that has a selective permeability to allow vaporization of liquid methanol (paragraph [0052]) (i.e. as recited in claim 5) said cartridge also containing a

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carbonaceous compound (paragraph [0023]), said membrane comprising silicone or silicone impregnated into fiberglass cloth or polyester film, said membrane further comprising a porous substrate made of polyurethane (paragraph [0050]) (see also paragraphs [0014]-[0056]).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 11-20, 22-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,069,793 hereinafter Kaschemekat.

Hockaday as discussed above is incorporated herein and further teaches the use of methanol-impermeable coatings on the housing walls (paragraph [0041]).

Hockaday does not teach that the composite membrane has a coating of a methanol-impermeable material on one surface.

Kaschemekat teaches a spirally wound multi layer composite membrane comprising a porous substrate (i.e. web), a membrane disposed on a first surface of the substrate (i.e. microporous substrate membrane) and a coating that is a permselective polymer on the other surface of the substrate and said multi layer composite membrane can be a plurality of membranes (column 1, lines 11-52, column 10, lines 33-64 and example 1). Kaschemekat further teaches that different polymers can be chosen for their specific selectivity.

At the time of the invention it would have been obvious to one having ordinary skill in the art to form a multi layer composite membrane having a porous substrate with a membrane on one side and a methanol-impermeable coating on the opposite surface and then spirally wind said multi layer composite membrane in Hockaday as taught by Kaschemekat, in order to provide a fuel cartridge that will have a higher capacity for methanol storage and improved safety by limiting the amount of methanol that can be leaked out of the container if it should be punctured while at the same time allowing the right amount of fuel through the fuel egress for supply to a fuel cell. It would have also been obvious to provide multiple multi layer composite membrane in Hockaday as taught by Kaschemekat to further increase the capacity for methanol storage and improved safety of the fuel cartridge and also because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. It would have also been obvious to

use polyurethane for the membrane in Hockaday as taught by Kaschemekat in order to provide a membrane that is properly selected for its specific chemical selectivity and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,681,467 hereinafter Solie.

Hockaday as discussed above is incorporated herein.

Hockaday does not teach that the membrane has a series of folds.

Solie teaches spirally wound membrane filters that are folded into predetermined shapes dependent upon the application (figures 1 and 2 and column 3, lines 15-55).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include folding the membrane of Hockaday as taught by Solie, in order to increase the overall surface area of the membrane to allow more methanol to be released and supplied to the fuel cell.

Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of Kaschemekat as applied to claims 11 and 24 above, and further in view of U.S. Patent No. 6,207,369 hereinafter Wohlstadter.

Hockaday as modified by Kaschemekat does not teach that the membrane is a sintered metal coated with a polymer.

Wohlstadter teaches that filters may comprise sintered metals coated with polymer membranes (column 70, line 66 – column 71, line 4).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a sintered metal coated with a polymer as the membrane for Hockaday as modified by Kaschemekat as taught by Wohlstadter in order to increase the overall rigidity of the fuel cartridge thus making it more durable and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

*In re Leshin*, 125 USPQ 416.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8 and 12 of copending Application No. 10/664,405. Although the conflicting claims are not identical, they are

not patentably distinct from each other because the claims of the instant invention fully encompass the scope of the claims in copending Application No. 10/664,405; the only difference is the claims in copending Application No. 10/664,405 further limit the structure by adding either a heating element or a bladder and piston arrangement.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3, 5-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6-9, 11 and 12 of copending Application No. 10/664,818. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications just use different words to claim the same thing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Hodge whose telephone number is (571) 272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RWH



JONATHAN CREPEAU  
PRIMARY EXAMINER